THE VETERINARY RECORD

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A Real Danger.

No danger is so great as that which comes from within the ranks. The veterinary profession, like all progressive bodies, is engaged in a constant struggle against prejudice, ignorance, and vested interests. All outside attacks or obstacles we can meet, and in our short corporate existence we have made a tolerably victorious progress. Only last year we were able to obtain recognition in the Public Health (Scotland) Act as the authority most fit to be entrusted with inspection of meat and of animals to be used as food. The privilege thus accorded by the legislature carried with it a great responsibility—that of showing ourselves worthy of the trust conferred.

Under the English Public Health Acts we have not attained a similar position, and in any amending Act our probable recognition depends entirely upon our demonstration of fitness in carrying out the Scotch Act. Our failure to do this can only occur from the action of our own members, who by a display of ignorance or negligence, may undo all the work achieved by the last few years of steady perseverance and sound teaching.

A case has just been heard in Edinburgh in which the Medical Officer of Health asked for an order condemning a carcase of beef as unfit for human food. There was no defence and the carcase was ordered to be destroyed. Under the English Acts this would have been followed by the prosecution of the person who sent the meat for sale. Under the Scotch Act veterinary surgeons are entrusted with a power which protects from prosecution the seller of such meat. A veterinary certificate that the meat is fit for human food relieves the owner from the consequences of his wrongful act. Doubtless there are cases in which the fitness or unfitness is a fine question, open to doubt, and therefore it is not unfair to afford protection to an inexpert person by permitting him to act upon the advice of an expert. The confidence placed in the veterinarian as an expert is open to abuse, and his certificate may protect an innocent man but it may shield a scoundrel. These cases come into court and are reported, they are read by the public, and forced upon the attention of local authorities. Any negligence or ignorance displayed by a veterinary surgeon reflects upon the whole profession, and a few cases would inevitably produce the impression that we were unfit for the duties now entrusted to us. In the Edinburgh case we make no accusation, but Sir Henry Littlejohn is reported to have said the certificate was given "no doubt by the private veterinary attendant at the farm, who was probably led by friendship to stretch a point." The magistrate said "for a skilled veterinary surgeon to have done such a thing was most reprehensible." We express no opinion on this special case, but it suggests a real danger to the whole profession, and we hope the Council of the R.C.V.S. will keep an attentive eye on any certificates which are wrongly given.

THE SUPPRESSION OF GLANDERS.

By W. Hunting, F.R.C.V.S.

Referring to the second part of the article by Professor McFadyean to which I devoted some attention last week, I note that he says some very hard things of those veterinary surgeons who have been insisting upon the necessity of paying fair compensation to the unfortunate owners of infected studs.

My first impulse was to reply to these in detail, and to show that some were exaggerated and some incorrect. On second thoughts I relinquish this method, because I am convinced that we both have the same end in view, viz., to push forward ideas likely to accelerate the adoption of some scheme of successful action. I am the more assured of the uselessness of mere dialectic struggles by the Professor's concluding paragraph. In it he expresses a hope "that when the horse-owners declare themselves ready to have every in-contact horse tested with mallein, and all horses that react relegated to special stables, the Local Authorities will grant liberal compensation for clinically glandered horses."

The inference I draw from this is that we both desire the separation of all infected horses as disclosed by the mallein test, the slaughter of all clinically diseased, and the payment of liberal compensation. This is exactly what all veterinary authorities are aiming at, and the difference in methods is a detail which may be adjusted.

I desire to reach this object by the conversion of the authorities, but the professor seems to think that their action should be dependent on an antecedent declaration of the horse-owners that they are ready and willing. This seems rather like putting the cart before the horse. Did the Board of Agriculture postpone action on swine-fever till the pig-owner declared his readiness to co-operate? Did the Privy Council decline to attack cattle-plague until the cattle-owner suggested the lines upon which action should proceed?

The horse-owner in London and the surrounding districts has a very valid reason for not moving first. He has often tried mallein, and in cases where it became known the authorities have seized the reacting horses and slaughtered them without compensation. Not unnaturally he now insists upon some

security for his property, and would like to see even the small advance of paying him the full price allowed by the existing law.

When the Authorities offer compensation as suggested by Professor McFadyean I have no doubt the horse-owner will be found a willing helper.

The obstacle to useful suppressive measures is not presented by the horse-owner. It is entirely due to the authorities, who have not yet awakened to the fact that the disease may be stamped out with certainty and at a cost less than is now entailed by their disregard of the spirit of the law.

Only a little while ago a member of the Executive Committee of the L.C.C. told the horse-manager of a firm that "the Council had no intention of stamping out glanders in London. That was the duty of the Board of Agriculture, and the expense should be not a local but a national affair." It is true this gentleman knew nothing about horses or their diseases, but that was hardly sufficient reason for declining to properly carry out the law as required by Act of Parliament.

The positive obstruction to the Glanders Order comes from a few county Councils, and only one explanation offers itself—the presence on the acting committee of a majority that has no knowledge of the horse, and mistaken notions of the ratepayers' interests. The horse owner is not obstructive, he is the victim of want of practical knowledge on the part of individuals who teach and control him.

By way of inviting some constructive criticism I offer the following outline of a scheme upon which new glanders regulations could be based. Some alteration of the existing Order would be necessary, but the alterations would only bring the procedure into line with the action now taken by very many local authorities and by a number of the large horse owners.

Notification. The owner, occupier, or person in charge should be compelled to notify the existence of a suspicious or diseased animal.

Inspectors. Veterinary inspectors should be appointed by all local authorities to diagnose reported cases, to visit infected or suspected stables, and to regularly inspect knackers' yards.

Slaughter. Local authorities should be compelled to slaughter all clinically glandered horses.

Compensation. A sum proportionate to the value of the animal should be paid for all horses slaughtered —say one-third the value—but no compensation to exceed £12 for any single horse. Payment might be withheld if the horse had not been in the district more than one month, or if the owner had been guilty of any offence under the Order.

Disinfection.—Cleansing and disinfection of all infected premises or materials should be enforced at the owner's expense.

Disposal of Carcases.—In country places burial is sufficient. In towns destruction at knackers' yards is best. In cases detected only by mallein the disease may safely be called local, and after removal and destruction of organs showing lesions the rest of the carcase need not be wasted, but might be used for trade purposes after boiling. All carcases should be disposed of by the Authorities, and no other person should be permitted to move or remove them.

In-contact Horses.—All horses which have been in contact with glandered horses should be prohibited from leaving the infected place until after examination by the veterinary inspector, and then be moved only with a licence of the Authorities. The licence would contain conditions against sale, and for the separation of suspected and healthy horses in the stable.

Reaction to Mallein.—Horses which react to mallein should be permitted to work, under inspection, so long as no clinical sign of disease could be detected, and a repetition of the mallein test should be at the option of the inspector. In cases where the owner demands that re-acting horses should be killed the Local Authority would slaughter and pay compensation.

Central Control.— The Board of Agriculture should not only possess but use controlling powers.

All this could be effected by a new Order, but if an Act of Parliament were obtained it might be well to add Veterinary Inspection of Imported Horses, and a clause holding the seller of a horse, that developed glanders within sixteen days after sale, responsible to the purchaser.

I submit this scheme with a hope that it may call forth criticism from persons who have any experience of the interests affected or the difficulties to be expected in carrying it out.

CLINICAL NOTES OF TWO CASES.

By A. W. Briggs, M.R.C.V.S., Halifax.

Equine Tuberculosis.

Subject.—Bay nag mare, four years old, purchased (unbroken) latter end of 1896. She did well in the hands of the breaker and was perfectly docile. She remained in, apparently, the best of health until February, 1897, when she became dull and listless, and rapidly lost flesh.

During April, 1897, her symptoms were as follows: Pulse small and thready. Temperature 102 to 104°. Staring coat; loss of appetite and flesh; partial, and sometimes complete, closure of eyelids; and every appearance of ascites.

Many and various treatments failed to produce an improvement in health.

Towards the latter end of April she was discovered to be in foal, though we had no history of service. In May she dropped a poor weakly foal which only survived a few days.

The mare gradually declined in spite of the administration of quinine, iron, whisky, eggs, milk and beef tea, and she succumbed in the latter part of November.

I was away for my holidays at the time, but my assistant made the autopsy and kept for my inspection the lungs, diaphragm, and mesentery—all of which were studded plentifully with the tubercle of phthisis.

I regret that no post-mortem was made of the foal for, as I now believe, we should have found evidence of tubercular phthisis. The mare was the property of Messrs. Elkanah, Hoyle and Sons, Ltd.

GELATINOUS DEGENERATION FOLLOWING NEUROTOMY.

Subject.—Bay gelding, seven years old, used for general omnibus work. The horse was purchased in the summer of 1897, and was brought out lame for my inspection in November. He was reported to me as having "over-reached" with the off hind foot and caused a wound on heel-pad of the off fore foot. There was a slight straw coloured discharge and an ordinary antiseptic lotion was used.

On seeing the patient three days afterwards I was surprised to see him with elevated toe, but an examination of the limb immediately showed the cicatrices of neurotomy. Pressure upon these cicatrices produced pain.

Re-examination two days afterwards revealed aggravated symptoms and the presence of an abscess, about the size of an ordinary Barcelona nut at the seat of the outer cicatrix (high operation).

I enclose photo which was taken just before the horse was destroyed, and which you will see distinctly shows the abscess.

I report this case because I have not read of, nor seen, a similar abscess. Could it by any means be sympathetic? This horse was the property of Messrs. John Marsh and Co., Ltd.

[The photograph shows the condition, but is too faint for reproduction.—ED.].

A NEW METHOD OF STAINING FLAGELLA WITH ORCEIN.

(*Preliminary Communication.*)

By Prof. THOS BOWHILL, F.R.C.V.S.

A series of experiments were instituted with various new staining methods to discover an agent to demonstrate flagella. The results with Orcëin were so excellent with some bacteria that I consider the matter of sufficient importance to describe the preparation of the mordaunt and the method of staining the specimens.

Method of Preparing the Orcëin Mordaunt.

No. 1 SOLUTION.		No. 2 SOLUTION.	
Orcëin	1 gramme.	Tannic Acid	8 grammes.
Alcohol Abs.	50 c.cm.	Aqua distilli	40 grammes.
Aqua distilli	40 c.cm.	(Dissolve the tannic acid by heating.	

Equal parts of No. 1 and No. 2 solutions are mixed and filtered before use.

Method of Staining the Specimens.

1. Two platinum loops of material are taken from the surface of a young Agar-agar culture, and a suspension made in 2 c.cm. of sterile water in a test tube.

2. One drop of the above water is put on a clean cover-glass and air dried.

3. The specimen is fixed in the flame—being held between the fingers to prevent excessive heating.

4. Pour some of the above Orcëin Mordaunt in a watch glass or porcelain evaporating dish, float the cover glass, preparation side downwards on the surface of the solution, and heat with a small flame, *do not boil*, leaving the specimen in the mordaunt 10 to 15 minutes.

5. Wash the specimen with a fine stream of water and dry in the ordinary manner.

6. Filter a drop of Ehrlich's anilin-water-gentian-violet on the cover glass, and heat gently in the flame until vapour arises.

7. Wash with a fine stream of water, dry, and mount in Xylol balsam.

The flagella of the following bacteria were stained by the above method: *B. typhi abdominalis, Spirillum choleræ Asiaticæ, Proteus vulgaris, B. subtilus.* (For the cholera preparations 1 c.cm. of a saturated solution of alum was added to 10 c.cm. of the Orcëin Mordaunt. The results with this organism were irregular and uncertain.)

FISTULÆ.

By JAMES DUNLOP, M.R.C.V.S., Downpatrick.

The following two cases, from their rarity, may prove of sufficient interest to the readers of *The Veterinary Record* to warrant insertion.

In January, 1896, on passing a farm, my attention was directed by the owner to a two-year-old grade shorthorn bullock in a very emaciated state. On examination I found it suffering from a very open fistula in the inter-maxillary space, close to the internal surface of the left ramus of lower jaw, and communicating with the mouth. During rumination a large quantity of saliva and food flowed from the opening.

On viewing it closely I found it perfectly lined with skin and mucous membrane, there was no lesion of the parotid duct. No history of the case could be elicited, the animal having been purchased at an auction a few months previously, and the defect was not seen for a few days after the purchase.

I was asked to operate, and two days after took with me needles, antiseptic tape, firing irons, scalpels, and antiseptic lotion. After throwing the animal I clipped the hair from the orifice, cauterised until hair, skin, and mucous membrane were removed, put in five interrupted sutures of antiseptic tape, drawing the vascular surfaces tightly together to prevent the insinuation of saliva or food; left a lotion of carbolic acid and chlor. zinc. to be brushed on the external orifice every four hours. The inflammatory lymph united the parts, and the operation was quite a success.

Case No. 2 was brought to my yard in the following autumn, and was the same in every particular as the first. On interrogating the owner regarding the genesis of the case, he stated that a lump had formed on the inner side of the lower jaw, which ultimately suppurated and formed the sore.

I operated in the same manner, but was not successful until I operated a second time.

It is singular that these were the only cases of the kind that I have seen in my professional career, and that they should have occurred in the same year.

ABSTRACTS FROM FOREIGN JOURNALS.

COLIC IN THE PRUSSIAN ARMY.—Statistical Veterinary Medical Report.

Of 4,158 cases due to derangement of the digestive tract colic was answerable for 3,414. Of these 2,960 recovered. The average annual loss from colic was thus about the same as in former years, the proportion varying between 12 and 14 per cent. Whilst in the earlier quarters of the year 600 horses approximately were ill, in the later quarters there were 1,029 and 1,132. The principle causes of colic as in preceding years, were attributed to lack of movement, eating the bedding and sand, chills, overfeeding, Indian corn, and crib biting. The greatest number of cases occurred after the manœuvres, in spite of all prophylactic precautions. The proportionate rest of the horses cannot be accountable for the frequency of colic cases during this period, for as Principal Veterinary Surgeon Wilden remarks, out of 68 horses that were rested for a week on account of lameness, only one—and this one a crib-biter—suffered from colic. There can be no doubt that eating straw in consequence of an insufficient supply of hay is the principal cause of colic occurring after the manœuvres. That soiled damp straw, partaking more or less of the character of manure is very injurious there is no doubt. With a more liberal allowance of fodder the eating of straw visibly declines, and horses having a sufficient supply of hay, even if standing on soiled straw, do not suffer from colic. In one squadron 30 horses were taken ill with colic in 14 days because spoiled rye straw was used for bedding. Good clean straw, and above all a liberal supply of hay if possible, is better perhaps than more concentrated food and is doubtless the best preventative of colic after the manœuvres. All other experiments with changes and substitutions of food have proved useless. Concerning recoveries from the employment of barium chloride the proportion is very variable in different corps. In some army corps the employment of barium chloride is forbidden, in others it is almost exclusively used. In these departments the favourable opinions preponderate over the unfavourable. Two cases are reported where horses died in from 6 to 15 minutes after the intravenous injection of barium chloride. In both cases, however, the fractional dose was not given. Veterinary Surgeon Kruger states that he has had the most favourable results with the fractional doses recommended by Dieckerhoff, and has not observed any pernicious effect on the action of the heart. Hirsemann found that doses of 6 to 8 decigrammes were not sufficient to produce full evacuations in big cavalry horses. Kapdanat treated 17 horses and had good results in a few minutes. Two horses treated with a small dose dissolved in warm water showed great symptoms of uneasiness without any subsequent effect. Kapdanat thinks the action of the drug is strengthened by solution in warm water. Bohreudt treated 46 cases with barium chloride and had excellent results, only one out of the 46 dying. Liepscher gives no preference to barium chloride over eserine. Möller thinks it good practice to give an eserine injection after administration of barium chloride per os. As regards puncture of the intestine reports agree that provided there is thorough disinfection of the skin and instruments the operation is devoid of danger.—*Berliner Thierarzt. Woch.*

SUTURING OF WOUNDS.—By Professor FRÖHNER.

It appears worthy of note that the question (*i.e.*, suturing of wounds) has chiefly cropped up in human practice, yet it is worthy of consideration also in veterinary practice for what seems correct in theory is not always so. As an illustration of this Fröhner relates the following:

On March 15th an 8-year-old gelding was brought in with a severe wound which was about 16 inches long, beginning in the neighbourhood of the patella on the off hind leg and running upwards parallel with the femur, describing a curve at the hip joint and extending as far as the outer angle of the ilium. At this point there was a triangular rent and a hanging flap of skin. The wound was about six inches deep. The biceps and gluteal muscles were laid open and much torn. The wound was relatively fresh, and it was resolved to suture it. All preliminaries were carefully carried out. The wound was irrigated for quarter of an hour with creolin and sublimate solution, sutured with sterilised silk, the wound drained, and its inferior angle left open. Finally the whole sutured area was dressed with iodoform ether and the horse tied up. For three days all went well. There was no great swelling. The sutures had all held, the discharge was normal, and the temperature stood at 38·9 C.

On March 20th a change suddenly occurred. Food was refused and necrosis began to show itself at the sutured part. All the sutures were therefore removed and the wound reopened its whole extent and antiseptically irrigated. The horse received subcutaneous injections of spirit of camphor, but died of septicæmia the following night.

Post-mortem.—The edges of the wound covered with necrotic muscle and skin. The muscular tissue of the buttocks engorged with blood and filled with the gases of putrefaction. Great pieces of putrefied muscular tissue; peritoneum greyish red and smooth; mucous membrane of stomach and intestines thickened and opaque; Peyer's patches enlarged; spleen enlarged, liver enlarged; cortex of the kidney thickened; lungs filled with air; foam in the bronchial tubes; muscular tissue of the heart dark coloured and brittle. The extensive necrosis of the wound which set up the deadly septicæmia would probably not have occurred had the wound been treated as an open one. Apparently extensive and deep wounds, especially if being over 12 hours old, cannot be completely disinfected. If then the skin is sutured over them so that an access of air is impossible to the depth of the wound new infective material cannot enter, but that which has already entered, and among it the anærobic bacilli of necrosis and œdema can develop undisturbed.

Although in numerous cases of large wounds very

good self-evident results have been achieved in the clinique, and healing by first intention, yet after this experience the suturing of large and not fresh wounds will be discontinued, and they will be treated as open wounds. Healing takes longer but the danger is less. Also in fistula of the spermatic cord Fröhner has had a similar experience.—*Berliner Thierarzt Woch.*

Treatment of Mallenders with Chromic Acid Solution.

Professor Fröhner cured two horses of chronic mallenders by painting the affected spots over with a 10 per cent. watery solution of chromic acid. They had been treated for 28 and 44 days respectively with various solutions and ointments without good result. Each of them was painted for five days daily with the solution and both were discharged cured.—*Mtsh. f. Th.*

Treatment of Chronic Nasal Gleet with Potassium Iodide.—By Army Veterinary Surgeon Schindler.

Schindler treated squadron and officers' horses suffering from nasal gleet with potassium iodide, 5-6 g. daily in a bucketful of drinking water continued for 6 to 8 days. If results were not satisfactory the medicine was discontinued for two or three days and then a second period of treatment given. The swollen glands were also rubbed with ointment of iodine and pot. iod. and hard glands injected with tr. iod. He had excellent results from this treatment.—*Thierärzt. Centralbl.*

G. M.

EXTRACTS AND NOTES.

TUBERCULOSIS AND MILK-SUPPLY.

Extract from a paper read before the American Public Health Association at the twenty-fifth annual meeting, Philadelphia, Oct. 26-29, 1897.

By Mazyck P. Ravenel, M D.,

Bacteriologist of the State Live-stock Sanitary Board of Pennsylvania; Instructor of Bacteriology, Veterinary Department, University of Pennsylvania.

The danger from milk was first pointed out by Professor Klencke as early as 1846, who gave the clinical histories of sixteen children who had been fed from the milk of cows, some of which were stable-fed and some swill-fed, all of which pointed to tuberculosis either of the intestines, glands, skin, or bone. This virulence of milk was confirmed by Gerlach in 1869, and later by others. The discovery of the tubercle baccillus by Koch in 1882 proved the possibility of what these men had found to be true clinically, and in the same year both Virchow and himself pointed out the possibility of the danger of infection of milk by the tubercle bacillus.

Among those who have given further clinical evidence of infection by means of milk may be mentioned Dr. Stang, of Amorback, who mentions a case of a well-developed five-year-old boy from sound parents, whose ancestors on both sides were free from hereditary taint, who died after a few weeks' illness of acute miliary tuberculosis of the lungs and enormously enlarged mesenteric glands. A short time before the parents had had a milch cow killed and found her the victim of advanced tuberculosis. Brouardel cites a case where five out of fourteen young girls living together in a boarding-school became consumptive subsequent to the daily use of milk from a tuberculous cow (Pearmain and Moor).

Dr. Demme records a case of four infants in the Child's Hospital at Berne, without tuberculous ancestors, who died of intestinal and mesenterlc tuberculosis, as the result of feeding on the unsterilised milk of tuberculous cows.

Professor Law states that after a lecture at Providence, Rhode Island, a gentleman of North Hadley, Mass., publicly stated that his only child, a strong, vigorous boy of one and a half years, went to an uncle's for one week and drank the milk of a cow which was shortly afterward condemned and killed in a state of generalized tuberculosis. In six weeks the child was noticeably falling off, and in three months died of tuberculosis of the abdomen. There was no tuberculosis on the father's side, but some on his mother's, although she herself was in perfect health.

Dr. E. O. Shakespeare attributes one-fifth of all deaths in infants and young children feeding on milk to tuberculosis, usually commencing in some part of the digestive organs.

Woodhead has recently stated "that from his experience in two large hospitals he has been much struck by the fact that in children who had died from other diseases during the course of tubercular disease of the abdominal glands there was frequently not any trace of tubercular disease in any other part, thus pointing to the intestine as a channel by which the bacillus made its way into the body." He also remarks that in a large number of cases of general tuberculosis, where the possibility of infection by the pulmonary passages was evidently excluded, the tuberculous process appeared to have invaded the body by the intestinal canal. These facts, taken in connection with the occasional existence of tubercle bacilli in milk, went far to prove in his opinion that milk was a source of tubercular infection, especially in young children. Woodhead found that out of 127 cases of tuberculosis in children the mesenteric glands showed tubercular infection in 100, and that there was ulceration of the intestine in 43. It is especially in children that this mode of infection occurs. In the adult, ulceration of the intestine is rare as a primary infection.

Direct evidence of the infection of adults by means of milk is wanting, and we should expect to find in such cases that primary tuberculosis of the intestine would be a common manifestation of the disease; but such is not the fact as shown by clinical evidence. That such infection does not take place in adults more frequently may, perhaps, be accounted for to some extent, at least, by the fact that a strong, vigorous digestion seems in some measure to protect the consumer. Peuch fed a two-months pig in five days four and a half quarts of milk drawn from a tuberculous udder, and when killed after fifty-six days it was found quite sound. Four rabbits inoculated with the same milk all became tuberculous.

The infection of animals by means of tuberculous milk, either by ingestion or by inoculation, is beyond question, different observers all agreeing on the main fact, their percentages of successful inoculation merely being different. It was formerly taught, and is still held by some experimenters, that the milk does not contain the tubercle bacillus, and is therefore not infectious, unless there is coincident disease of the udder of the cow producing it. There is, however, very strong evidence against this opinion. Ernst found in 33 per cent. of the cows examined by him, in which a careful post-mortem examination was made, which showed that the animals were widely affected with tuberculosis, but that the

udder was free from disease, that the milk contained the tubercle bacillus. In 1893 Theobald Smith showed that the tubercle bacillus may be present in the milk of tuberculous cows when the udder, so far as the naked eye could tell, was free from disease. Other observers have given similar results.

The most positive evidence, however, is given by inoculation-experiments. Hirschberger, by inoculation of rabbits in the abdominal cavity with the milk of 29 tuberculous cows, of which the udders were, or appeared, sound, produced tuberculosis 14 times. Bang inoculated from 63 tuberculous cows selected for their sound udders, and found the milk of nine of them infectious. A subsequent microscopic examination showed the udders of 3 of these cows to be diseased, leaving 6 which gave infectious milk in which even after death no tubercle bacilli could be found in the udder. Ernst found 10 cows in 35 with infecting milk, though the udders were sound. Of 103 animals inoculated, 17 contracted tuberculosis, and of 12 calves sucking the cows, 5 became tuberculous.

It is also known that the primary seat of tuberculosis in children is so frequently in the intestines and their related glands, and milk forms so large and essential an element in the food of children, that we cannot avoid the conclusion that it is to them a frequent source of infection.

Dr. Russell, Health-officer of Glasgow, is so impressed with the danger of tubercular infection by milk that he regards the supervision of the milk-supply as of at least equivalent importance with the regulation of the expectoration of consumptives and as being a much more practicable matter of sanitary administration. He says: "There is no need for argument in reference to the milk of tuberculous cows. The facts are so universally accepted, and so grave, that the administrative effects shine through them. It is practically the Glasgow position—that a tuberculous cow must not be retained in a dairy. There is a remarkable consensus of opinion as to the influence of milk in disseminating tuberculosis, especially among the young. The pathologist finds that of the total deaths under ten years of age among the mass of people, about a third are due to tuberculosis, and the usual seat of the disease at that age points to food as the medium of infection. The prevalence of tuberculosis among dairy cows is notorious."

Dr. Martin, in the report of the Royal Commission on Tuberculosis, writes: "The milk of cows with tuberculosis of the udder possesses a virulence which can only be described as extraordinary; all the animals inoculated showed tuberculosis in its most rapid form." Dr. Woodhead, investigating for his own purposes the effects of unboiled milk, speaks in similar terms of this virulence of milk derived from tuberculous udders and inoculated into test animals.

The identity of tuberculosis in cattle and in man seems to be beyond question, although the manifestations of it may differ at times to a great extent. A few cases showing direct transference of the disease from cattle to man by inoculation may be quoted.

Tschermig, of Copenhagen, attended a veterinarian who had cut his finger in making a post-mortem examination upon a tuberculous cow. After healing, the the wound began to ulcerate, and the finger was finally removed. Microscopic examination revealed a tuberculous process with the presence of the tubercle bacilli.

Pfeiffer attended a veterinarian thirty-four years of age, with a good constitution and without hereditary predisposition, who cut his thumb in making a post-mortem examination of a tuberculous cow. The wound healed, but six months later the cicatrix still remained swollen, and in the fall of the next year the man developed pulmonary tuberculosis, bacilli were found in his sputum, and death occurred two and a half years after the wound. Post mortem examination revealed tuberculosis of the joint of the wounded thumb.

Professor Law quotes a case of a young veterinarian, a friend of his, who was inoculated in the hand while opening a tuberculous cow, and who suffered from a tumefaction of the resulting cicatrix, which showed tubercle bacilli.

To these cases may be added one which came under the observation of the writer recently. Dr. E., a veterinarian of Downingtown, Pa., cut the knuckle of his forefinger while making a post-mortem examination of a tuberculous cow. The wound healed badly, remained swollen, and showed decided tendency to ulcerate. Removal of the cicatricial mass was practised and the tissues sent to me for examination. They showed typical tubercular lesions, with giant-cell formation.

Further evidence is given by the condition of our Northwest Indians. Dr. Holder, in *The Medical Record*, gives the Indian mortality from consumption as 50 per cent. of all deaths, at Green Bay, Wis., Tulalip, Wash., and Western Shoshone, Nev. He says that at lower Brulé, Dak., scrofula is present in 60 per cent. of the Sioux under twenty-one years, and that at Crow Creek, Dak., 50 out of a total Indian population of 1200 die yearly of consumption and scrofula. The animals furnished to these tribes are said by Dr. Treon, an American practitioner, to be poor, emaciated, and diseased. He describes how they eat liver, tallow, and entrails, raw and fresh, and how the carcass is dried, pounded, and packed in the skins to be eaten later without cooking. The meat is eaten, even though the animal may have died of disease. (Law.)

I have given in these pages only a part of the evidence that is at hand on the question; but enough has been said, I think, to show the soundness of the conclusions arrived at by the Royal Commission on Tuberculosis, that,

. . . . "As to the proportion of tuberculosis acquired by man through his food or through other means, we can form no definite opinion, but we think it probable that an appreciable part of the tuberculosis that affects man is obtained through his food.

And "No doubt the largest part of the tuberculosis which man obtains through his food is by means of milk containing tuberculous matter."

The remedy lies in the careful inspection of milch-cows and the immediate weeding out of all diseased animals found. Milk from suspected cattle should be carefully sterilized before using, and especially should not be given to infants and invalids. The inspections of the animals should be at intervals frequent enough to keep the disease from gaining headway before being discovered.—*Jrnl. Comp. Med. & Vet. Arch.*

THE STUDY OF MORBID ANATOMY.

(Extract from a paper delivered at the meeting of the Pathological Society of London.)

By Joseph Frank Payne, M.D.

Pathology and therapeutics include the whole of medicine and surgery; and if we omit therapeutics and prophylaxis, or the science of health, which, though closely related to the art of healing, is not strictly a part of it, there is no department of medical science which this name does not cover.

But the blame for this error, if it is an error, does not rest with this Society. It falls upon a great part of English medical literature. We use the word in a more limited sense than that in which it is used in the medical literature of other countries. We mean, generally, mor-

bid anatomy or morbid histology. And it is, I think, to be regretted that some of our excellent textbooks, dealing exclusively or chiefly with pathological histology, have been entitled treatises on "pathology," whereas the corresponding works in the literature of France and Germany limit themselves to the title of "pathological histology." This conception of pathology has become so widely spread that a candidate at an examination, if asked about pathology, thinks he has to answer about something which is seen through a microscope.

Let me say, however, that this mistaken idea of the all-importance of pathological histology is not confined to students of our own country. I remember when I was studying in Vienna the great clinical teacher, Oppolzer, having to speak of a case of pneumonia, and looking about for some peg on which to hang his discourse, asked a student the fundamental question, "Well, then, what is pneumonia?" The student, under the glamour of the mysteries then lately revealed in Virchow's cellular pathology, began to repeat something about "proliferation of connective tissue," till the professor burst into a hearty laugh. "Well, I dare say that is quite true, but at the same time there is something more." And then he went on to show how much besides this was included in the conception of a disease like pneumonia. Now, though the word pathology was not, I think, mentioned, the Vienna student exhibited in a concrete form the very error of which I am speaking.

No one really thinks that anatomical changes, whether gross or minute, make up the whole of pathology.

Pathology is so far from being exclusively a post-mortem study that in one sense it ends with death, when its subject—disease—also comes to an end.

But the evidences of disease remain. We study them only so far as they are not accessible during life. The human body is, unfortunately for our purpose, not transparent, and this defect has only partially been remedied by the discovery of the *x* rays.

Again, we cannot dig and delve into the living body as we can when life is extinct. Modern surgery has helped us in this matter. For instance the morbid anatomy of the ovaries is now founded more on surgical than on post-mortem specimens. This is equally true of the pathology of the vermiform appendix, and I need not point out that the study of tumours is now not even predominantly a post-mortem investigation. Living patients, again, often teach us more morbid anatomy than we should learn from a post-mortem. All these methods of study belong to our subject, and it would be a great mistake to call all that is observed during life clinical, and only that which is observed after death pathological.

The connection of morbid anatomy and diagnosis is closer than that of a merely historical sequence; it is a relation almost of identity. Our physical diagnosis is not immediately the diagnosis of a particular disease, but immediately that of certain physical conditions, which, if occurring in certain parts and in a certain order, are known by experience to be indicative of a certain disease. Consolidation or excavation of the lung, blocking of air tubes, presence of fluid in the pleura, and so on, are the conditions recognised. Experience and associated symptoms teach us that they indicate pneumonia, phthisis, or bronchitis, etc., as the case may be. This kind of diagnosis is really a study in morbid anatomy, anticipating the result of post-mortem examination.

Equally true is it that auscultation and percussion of the heart do not indicate disease directly, but only mechanical and physical conditions which follow or cause disease—that is, facts of morbid anatomy. Equally true is it in diseases of the abdomen that by physical diagnosis we endeavour to ascertain the morbid anatomical condition of organs which we cannot see. All this is pathological anatomy; and in many diseases, as Bichat said, the morbid anatomical condition is the determining one. By combining our knowledge of it with observation of functional changes we make a complete diagnosis. In acute fevers and some other diseases where the functional element predominates our diagnosis is not an anatomical one. We may know by experience the state of the organs, but that is not our immediate object of research. Still in all cases where anatomical or so-called pathological diagnosis is possible, that constitutes the most exact and trustworthy part of clinical diagnosis.

It is not too much to say that in diseases of internal organs (of which alone I am speaking) that physician's diagnosis is likely, other things being equal, to be most exact, who can form to himself the most precise mental picture of the state of a diseased organ, and who knows also how to infer the existence of that state by observations during life. For this purpose a mere textbook knowledge of morbid anotomy is insufficient. It is necessary to have seen, handled, weighed, and examined diseased organs for oneself.

I have now spoken of morbid anatomy in relation to clinical medicine, so far as both are concerned with the study of cases; and much more might be added to show the debt which the art of medicine owes to pathology. But I must pass on to speak of the services of pathology or morbid anatomy to the science of medicine, which services are perhaps more called in question.

Now though, as I have urged already, the anatomical side is only one of the two aspects of medical science, it is one of enormous importance, and is intimately concerned even in the most recent phases of medical progress.

To speak only of one branch of scientific investigation—bacteriology; let us consider what part morbid anatomy, including, of course, histology, has played in its advancement.

Bacteriology is, strictly speaking, a branch of biology, or specially of botany, but it has many sides. We deal with it only as concerned with disease. The bacteriologist, when he makes cultivations, is a botanist; when he detects bacilli in diseased tissues or in tubercles produced in animals by inoculation, he is a pathological anatomist; when he studies the production of immunity in living animals, he is rather a clinical investigator. But he can seldom dispense with pathological anatomy or histology. There are two main lines of activity in pathogenic bacteria. One is the injury or destruction of cells and tissues; the other diffuse poisonings, or functional disturbances produced by their products. The first kind of pathogenic activity is shown by the bacillus of tubercle, which is chiefly injurious by its destructive action on the tissues, though no doubt its products are also injurious. The second kind is seen in such organisms as the tetanus bacillus, which is injurious chiefly by functional poisoning through its products, the tissue changes being subordinate.

Different means of research are required in each case, but, as regards the tissue-destroying bacilli, the investigation is almost entirely pathologico-anatomical. Even in the study of such organisms as the tetanus bacillus, morbid anatomy plays an important part. Indeed, without morbid anatomy there could have been little bacteriology of disease.

Pathological chemistry is so closely connected with material changes in the body that it has always accompanied pathological anatomy, and is one of our recognised subjects.

With regard to pathological physiology or pathology studied by experiments in the physiological laboratory the case is not so clear.

Pathology ought not to lose touch of practical medicine. It can both aid and profit by the daily experience of those who are carrying on the great practical work of our profession. It would be a loss rather than a gain

were pathology to live in laboratories and museums like a cloistered recluse, not breathing the common air of the whole medical world. Specialism in science there must be, for it is only one form of the division of labour on which all progress depends, and an experiment may save a thousand lives where a prescription or an operation saves only one. But a concrete and practical science like pathology cannot flourish if cut off from the every-day experience of disease.—*The British Medical Journal.*

CUBIC AIR SPACE IN DAIRIES AND COWSHEDS.

(Extract from *The Journal of the Royal Agricultural Society of England*, Vol. VIII., 1897, pp. 774-81.)

The following case, tried on November 1, 1897, before Mr. Justice Wright and Mr. Justice Kennedy in the Queen's Bench Division, is important, as giving what is believed to be the first judicial interpretation of the powers possessed by local sanitary authorities under the Order of Council of 1885 with regard to the imposition of regulations as to the minimum number of cubic feet of free air space to be alloted to each cow in a cowshed.

The case is thus reported in *The Times* of November 2nd last :—

BAKER *v.* WILLIAMS.

This was a special case stated by magistrates for the Borough of Southport raising the question as to the validity of a bye-law or regulation made by the mayor and corporation of Southport providing that in cowsheds in the borough there must be 800 cubic feet of free air space for each animal. The appellant, a dairyman and cowkeeper, had been convicted for contravening the regulation, which purported to be made under the Contagious Diseases (Animals) Act, 1878, and Dairies, Cowsheds, and Milk Shops Order of 1885, and was dated April 8, 1890. It was contended—(1) that the regulation in question was one that could not be made by the mayor, aldermen, and burgesses as the local authority under the Order of 1885 ; (2) that the word "ventilation" in the 13th section of such Order did not authorise any regulation with regard to the quantity of air space ; (3) that the provisions of section 34 of the Contagious Diseases (Animals) Act, 1878, did not, nor did section 9 of the Act of 1886, or any other provision of either Act, authorise the making of any Order of the Privy Council regulating air space or free air space ; and that, therefore, in so far, if at all, as the Order of 1885 imposed any restrictions as to air space, or purported to authorise the making of any regulations by the local authority as to air space, such Order was invalid.

Mr. Moulton, Q.C., Mr. Pickford, Q.C., and Mr. Horridge with him, appeared for the appellant ; Mr. MacMorran, Q C., and Mr. G. H. Pollard for the respondents.

Mr. JUSTICE WRIGHT said that by section 34 of the Contagious Diseases (Animals) Act, 1878, the Privy Council were empowered to make Orders, subject to the provisions of the Act, for the lighting, ventilation, cleansing, and water supply of cowsheds and dairies, and for authorising a local authority to make regulations for the purposes aforesaid. By section 58 such an Order was to have the effect of an Act of Parliament. In 1885 the Privy Council made an Order under the Act. By section 7 of that Order it was provided that it should not be lawful for a cowkeeper to begin to occupy a dairy or cowshed unless he first made provision to the reasonable satisfaction of the local authority "for the lighting and the ventilation including air space and the cleansing," &c., of the same. By section 8 it was provided that it should not be lawful for a cowkeeper to occupy any cowshed, whether old or new, "as long as the lighting and the ventilation including air space and cleansing," &c., were not such as were proper. By section 13 *(b)* a local authority had power granted to make rules for "regulating the lighting, ventilation, cleansing, drainage, and water supply of dairies and cowsheds." The question was : Did those words give the power to the local authority to make regulations for air space as well as ventilation ? It was rather strange that air space should be included in sections 7 and 8 and not in section 13. The Order under the Act was to have the effect of an Act of Parliament. The case cited about the Institute of Patent Agents showed that, in such a case, the Order and statute should be read together. Following that principle, there was no inconsistency in interpreting section 13 of the Privy Council Order as giving power to the local authority to make regulations in respect of "ventilation and air space."

Mr. JUSTICE KENNEDY concurred. This was a case of a conviction for breach of the regulations as to cowsheds. The regulation was said to be *ultra vires*. It seemed to him that there was nothing wrong in a Privy Council Order under the Act dealing with air space. In fact, they had provided for air space as well as ventilation for all dairies and cowsheds, both old and new, though it was difficult to see why in sections 7 and 8 ventilation and air space were included and not in section 13. The decision of the magistrates was right.

Beyond the issue of circulars dated October 20, 1886, and November 3, 1886, directing the attention of sanitary authorities to the provisions of the Act of 1886 and to the Order of November 1, 1886, made thereunder, the Local Government Board appear to have taken no further general steps in the matter until March 7, 1889, when they issued to such local authorities as had not deposited with the Board copies of regulations as required by the Order, a circular letter to the following effect :—

The Board have not received a copy of any regulation or series of regulations made by the sanitary authority on the subject in question, and they infer, therefore, that no such regulations have been made, Under these circumstances the Board are desirous of impressing upon the sanitary authority the importance of excercising the powers conferred upon them in this matter by Article 13 of the Order of 1885, and of urging them to take steps to frame regulations for their district.

The Board may add that model regulations bave been issued by Messrs. Knight & Co., 90 Fleet Street, E.C., Messrs. Shaw & Sons, Fetter Lane, E.C., and Messrs. Hadden, Best & Co., West Harding Street, E.C , and the Board would suggest that the sanitary authority should base their regulations on one of these series.

A draft of any regulations proposed to be made by the sanitary authority should be sent to the Board before they are adopted.

The use in this circular of the term "model regulations" might be held by the local authorities to whom it was addressed, to indicate that the printers' bye-laws to which they were referred had been in some way sanctioned by the Board or prepared in their department, as is the case with "model bye-laws" as to other sanitary matters. It is not of course apparent from the circular, but is nevertheless the case, that these three sets of "model regulations," on any one of which the Board suggested the sanitary authority should "base their regulations," are wholly different in terms, and that in one very important matter they are at variance.

It is to be regretted that the Act of 1886 did not go a little further, and provide that such regulations should be equivalent for all purposes to bye-laws under the Act of 1875 ; for in that case the restrictions and limitations imposed by section 184 of the latter Act would then have

been applicable to them. The intention to pass such bye-laws would then have been advertised in the local newspapers in advance of their coming into force; the bye-laws would be available for perusal by any one likely to be affected by them; they would be subject to confirmation by the Local Government Board; and they must be reasonable.

At present there are no such safeguards to the persons who may be injuriously affected by the imposition of regulations at the arbitrary will of a local authority, who, without any necessity for preliminary public notice or submission of their proposals to a higher authority for confirmation, may pass at a single sitting regulations the enforcement of which may shut up half or even all the cowbyres in their district. It is true that the Local Government have power to revoke any regulation which they are satisfied, after inquiry, is of "too restrictive a character or otherwise objectionable"; but the onus of taking action appears to lie upon the complainant, and the tacit assent of the Local Government Board has heretofore been given to what must be regarded as a too high standard for universal application in the matter of air space for cowsheds, the importance of a given number of feet having been accentuated, whilst the equally important matter of "necessary and proper ventilation" has only been referred to in generalities.

There is reason for believing that, now that the attention of the Local Government Board has been directed to the question by the deputation from the Royal Agricultural Society which waited upon the President on December 13, 1897, some means will be found of remedying the existing anomalous state of things. Whilst, of course, all will agree in the propriety of reasonable regulations for securing the cleanliness of cowsheds and the purity of milk supplies, it clearly behoves owners of dairies and cowsheds in country districts to be on their guard against the imposition, by their local sanitary authority, of too restrictive requirements as to cubic air space based upon "Models" which have no more real authority than that of the printers who sell them.

ERNEST CLARKE.

13 Hanover Square, London, W.
December 18, 1897.

LETTER FROM THE LOCAL GOVERNMENT BOARD.

A deputation from the Society waited upon the President of the Local Government Board on the 13th December, 1897, to make representations to him as to the present anomalous state of things with regard to regulations made under the Order of 1885.

The following letter has been received from the Board on the subject:—

CUBIC SPACE IN COWSHEDS.

Local Government Board, Whitehall, S.W.
December 28, 1897.

[COPY.]

SIR,—I am directed by the Local Government Board to advert to the interview which Colonel Sir Nigel Kingscote and yourself, acting on behalf of the Royal Agricultural Society of England, had with the President of the Board relative to the cubic space required to be provided in cowsheds in the occupation of persons following the trade of a cowkeeper of dairyman.

It appears that it has been supposed that the regulations made by the local authorities on this subject are based on Model Regulations issued by the Board; but it is evident that there is some misapprehension in this matter. The Board have not issued any Model Regulations on any of the subjects with respect to which District Councils can make regulations under the Order of 1885. It is true that several of the publishers of books and forms relating to local government have issued forms for the use of local authorities in preparing Regulations under the Order, but these forms have not been issued with the approval of the Board, who have been in no way concerned in the matter.

It is true that the Board, in dealing with some particular cases which have come before them, have expressed an opinion that not less than 800 cubic feet of air space per cow should be required. But they do not consider that this amount of air space should necessarily be provided in all circumstances, and as a matter of fact the amount required by different District Councils varies considerably.

The Board think it desirable that a minimum amount of cubic space should be prescribed in each cow, and in the case of Baker v. Williams it has been expressly decided that a Regulation may legally be made for this purpose; but it rests with the District Council to determine whether they will exercise their power of making such a Regulation, and if so, what the amount of cubic space required shall be, subject only to this, that Article 14 (3) of the Order of 1885, as amended by the Dairies, Cowsheds, and Milkshops Amending Order of 1886, provides that if the Board "are satisfied on inquiry with respect to any regulation that the same is of too restrictive a character or otherwise objectionable, and direct its revocation, the same shall not come into operation, or shall thereupon cease to operate, as the case may be."

It was suggested at the interview that the Board should themselves issue Model forms for the use of District Councils in framing Regulations under the Order of 1885. The Board will give careful consideration to this suggestion; but as they understand that the Royal Commission on Tuberculosis have had their attention drawn to the question of air space in cowsheds, and that the Commissioners are now engaged upon their Report, it seems to the Board to be desirable that any action of this kind should be deferred until the Report of the Commission has been issued.

I am, Sir, your obedient servant,
(Signed) S. B. PROVIS,
Assistant Secretary.

ERNEST CLARKE, Esq.,
Secretary to the Royal Agricultural
Society of England.

DISEASED MEAT SCANDAL IN EDINBURGH.

In Edinburgh Police Court, on January 7th, a petition was presented asking for the destruction of the carcase of a bullock which had been seized in the Edinburgh slaughter-houses by one of the inspectors of markets for the city, and condemned by them as diseased and unsound and unfit for human food, and which was intended for human consumption. The owner of the carcase, an Edinburgh butcher, was represented by Mr. Weston Leys, who presented a certificate from a veterinary surgeon certifying the carcase in question as fit for human food. Evidence was given by the market inspectors as to the condition of the carcase. Sir Henry Littlejohn said he had seen the carcase, and it was quite unfit for human food. The flesh was sodden, and it was generally damp and decomposing. Mr. Leys—Have you seen the certificate from the veterinary surgeon in the country? Sir Henry—That was at once handed to me. The Magistrate—And how do you think this can be squared? Sir Henry—This man, I have no doubt, is the private veterinary attendant on the farm, and I have no doubt he was led by friendship to stretch a point, but there can be no doubt that no veterinary surgeon ought to have passed this carcase. It was quite a scandal. Mr. Leys asked whether it was possible that the state of the carcase when seen by this veterinary surgeon was such to

warrant him in granting the certificate. Sir Henry—Certainly not; I saw it on the same date as the certificate was granted. Mr. Leys stated that the Public Health (Scotland) Act, which had come into force on the 1st of this year, provided that the possession of such a certificate as had been granted exempted the owner of the carcase from any penalty. At the conclusion of the evidence, Mr. Leys said that he could offer no objection to the prayer of the petition, but certainly his client could not be prosecuted, because he was protected by this certificate, which had been granted by a veterinary surgeon appointed by the authorities for that purpose. In granting the order, the Magistrate (Mr. Gulland) said there was very great risk to the public health in a country surgeon, or any surgeon, giving a certificate for flesh in such a wretched condition as that carcase appeared to have been, and he was very glad that the case had come up, and that it had been proved up to the very hilt that this animal should never have been sent to the slaughter-house. It was fortunate that it had been noticed by their inspector, otherwise it might have been a very serious thing for the public. For a skilled veterinary surgeon to have done a thing of this kind was most reprehensible. He could not understand it. Mr. Leys said he quite acquiesced in what the Magistrate had said.—*The Edinburgh Evening Dispatch.*

WARRANTY OF A COW.

Sheriff Campion has issued his interlocutor in the action raised at the instance of Mr. James Pratt, farmer, Burtensett, near Hawes, Yorkshire, England, against Mr. Robt. Black, innkeeper, Bentpath Hotel, Langholm, in which he concluded for (1) £17, being price of an alleged unsound cow which belonged to defender, and was purchased at Messrs. Hetherington's Auction Mart, Carlisle; and (2) the sum of 10s. 6d. which he paid for the examination of the cow, and legal interest upon both sums from the 27th February, 1897, till payment. Appended is the interlocutor and note:—

Dumfries, 31st Dec., 1897.

The Sheriff-Substitute, having considered the proofs and whole process, after a debate thereon, finds (1) that on 27th February, 1897, the pursuer bought a cow at Hetherington's Auction Mart, Carlisle, which had been consigned for sale by the defender, at the price of £17, which was then paid by the pursuer; (2) that said cow was warranted correct, but upon examination by pursuer shortly after the sale it was found that she would only give milk from three teats; and (3) that pursuer thereupon, through Messrs. Hetherington, intimated his rejection of the cow, and that said cow was therefore taken back by defender. Finds that pursuer is entitled to repayment of the said sum of £17 sterling paid by him for said cow, together with the sum of 10s. 6d. being the veterinary surgeon's fee paid by him for the examination of said cow. Therefore repels the pleas-in-law stated for the defender, and grants decree against him in terms of the prayer of the petition; finds the defender liable in expenses; allows an account thereof to be given in, and remits the same when lodged to the auditor of court to tax and report.

GEO. CAMPION.

Note.—At the sale of the cow in question it was a condition that the cow should be correct, and give milk from every quarter of her udder. It is now contended by pursuer that the cow was disconform to warranty, was accordingly rejected by him and taken back again by defender. The cow was bought by pursuer at Hetherington's Mart on Saturday, 27th February, 1897, at the price of £17, which was then and there paid by pursuer. Pursuer says he did not examine the cow till perhaps a quarter of an hour after he had paid for her, when he at once detected she had a faulty teat, which, from his practical experience, he considered a deaf teat. Thereupon he instructed the man who attended to the loading of his cattle to tell the Auction Company that the cow had a faulty teat, and that he was leaving her, though as a matter of fact the man did not deliver the message until Monday. A few days afterwards (either 2nd or 3rd March) pursuer wrote to the Company saying that he refused to take the cow. The cow calved on the 4th March, and was to have been sold "as in dispute," but was never in a fit state for sale, and ultimately died on 29th March. The question was whether the cow was disconform to warranty, and was returned to defender by pursuer. Now, we have the very clearest evidence from pursuer to the effect that as soon as ever he examined the animal, within about a quarter of an hour after the sale, he discovered she was not correct, and in this he is corroborated by Mr. Bell, the V.S., who, on the 19th March, examined her as to soundness at pursuer's request. After that Mr. Bell was instructed by defender to attend the cow till 29th March, when she died. Now, from whatever cause this faulty state of the cow arose, it is, I think, difficult to come to any other conclusion than that it existed at the time of sale—that it rendered her disconform to warranty, and that pursuer thereupon refused to accept her, or to have anything further to do with her, save to have her examined on his behalf by a veterinary surgeon as to her soundness while she was still standing at the Auction Mart. Both verbally and by letter, notice of this rejection was given by pursuer to the Company, and by them to defender. Further, I am of opinion, to judge by his correspondence with the Company, from his offer to pursuer and the witness Johnstone, and his instructions given for the treatment of the animal, it was defender's own impression that the cow while in Hetherington's Mart was his property. Defender now contends that the animal was correct at the time of sale, and that it was owing to pursuer's carelessness in leaving the cow in a draughty, open byre after the sale that she caught a chill and died. It scarcely needs professional evidence to tell us that driving a cow 5½ miles by road the previous day, then trucking her from Langholm to Carlisle, and walking her from the station to the mart, is as likely to have produced the chill—if chill she suffered from—as leaving her in a byre which seems to be as good as any to be found at marts in the country. On this point considerable reference was made to the evidence of the veterinary surgeon, Mr. Heweson, who saw the cow first on Sunday, 7th March. Mr. Heweson, however, appears to be mistaken when he says that the ailment then was of quite recent origin, certainly within a week at any rate; for whatever the ailment, and whatever the cause, the ailment at some stage was there, and was detected by pursuer on 27th February, as soon as ever he examined the cow after the sale. On the whole evidence, I am of opinion that the cow was disconform to warranty at the time of sale, that due intimation of rejection was given by pursuer, and that she was thereupon taken back by defender. Therefore, however hard upon defender it may be that the animal got worse and died, upon him, as the owner of the animal, the loss must fall. G. C.

The agents in the case were—for pursuer, Mr. Edward Dunlop, writer, Lockerbie; for defender, Mr. J. C. R. Macdonald, solicitor, Dumfries.—*Dumfries & Galloway Courier and Herald.*

A CROMER "VET" IN COURT.

At Cromer Petty Sessions on Monday, January 3rd, before Messrs. R. W. Ketton (chairman), S. Hoare, M.P., and R. H. J. Gurney, Robert Hedley Sharpen, of Holt Road, Cromer, was summoned on the information of James King Gooch, M.R.C.V.S., of Holt, on behalf of the Royal College of Veterinary Surgeons, for that he, not being on the Register of veterinary surgeons, and not holding at the passing of the Veterinary Surgeons Act, 1881, the certificate of the Highland and Agricultural Society of Scotland, did, on August 2nd, and divers days between June 4th and September 4th, unlawfully use and take an additional description stating that he was a veterinary surgeon. Mr. E. Reeve (Mills and Reeve, Norwich) prosecuted, and Mr. Draycott was for defendant.

Mr. Reeve at the outset said that the penalty attaching to the offence was £20. He read the terms of the Act, and said its framework gave to the Council of the College a quasi-judicial character, as they could only authorise a private person to take up the case. The facts were remarkably simple. Mr. Sharpen, against whom he had nothing whatever to say personally, seemed to have practised in Cromer as a veterinary surgeon, and held out to the world that he was a veterinary surgeon. He would put in the Register of veterinary surgeons for 1897, in which defendant's name did not appear. There was only one person of his name in the list, and that was of his father, who lived at Gresham. That, he submitted, was quite sufficient to prove his case. He should also prove that defendant issued cards describing himself as a veterinary surgeon, and a plate where he lodged bore the same description. Mr. Reeve added that he might say the College did not wish to press the case harshly, but, naturally, those people who had spent a lot of money in studying felt that their preserves should not be trenched upon. He then called

Jane Sarah Cooke, of Woodbine Cottage, Holt Road, Cromer, who said defendant lodged at her house. If any messages arrived she gave them to him, but she could not say whether he practised as a veterinary. A brass plate bearing the inscription, "Sharpen, Veterinary Surgeon," was put up soon after he came. Two cards produced, bearing the same words, were obtained from her house—by, she alleged, false pretences. She could not say whether they related to defendant.

Cross-examined.—The gentleman who obtained them came to the back door, and said he had a friend who wanted some veterinary work done. Witness had no authority to give him the cards, and she had to hunt for them. She had never given cards before. She knew Mr. Sharpen's father, and he attended at her house often, messages being sent there for him.

Harry Alfred Solomon, clerk at Messrs. Mills and Reeve's, said that on December 1st he attended at the house of the last witness, and Mrs. Cooke's daughter opened the door. He received the two cards produced from the mother, the daughter having fetched them. He asked for a billhead and saw one, but did not obtain it.

In cross-examination witness said he did not say he wanted some veterinary work done, his words were "I have been recommended to Mr. Sharpen as the best veterinary surgeon in the town, can you give me a card to send to a gentleman." He was thereupon asked into the house and the cards produced were handed to him. On being asked who was the gentleman referred to, witness replied "Mr. Reeve." (Laughter.) He was told by Mrs. Cooke that defendant's business had nothing to do with his father's, she was most positive of that. The cards were not given at once for Miss Cooke had apparently to hunt for them.

Charles Watson, assistant to Mr. Dulley, chemist, Cromer, said he had known defendant five years. During the last two years he had been living at Cromer, and Mr. Dulley had supplied him with drugs for his business, they being either booked to him or paid for by him.

This was the evidence for the prosecution, and

Mr. Draycott, for the defence, submitted that no case had been made out. He contended that there was no evidence to connect the defendant with the card or plate, for the bare fact that he lodged at the house where the plate was up did not prove it, for they had heard that the father went there frequently. The son had many years' experience in the treatment of diseases of animals, and there was nothing in the world to prevent him continuing with his work. Defendant, perhaps, knew more about the work than any qualified man.

Mr. Reeve.—I have nothing to say against him.

Mr. Draycott expressed the opinion that if the College had had all the facts of the case before them they would never have instituted the proceedings, and referred to a resolution passed by the Council, as contained in the register of 1884, authorising the secretary to send cautionary letters to those practising under certain styles, and to prosecute under Sec. 16 those calling themselves veterinary surgeons. The fact that defendant was not even written to might be cited as being in his favour. There was not the slightest intention on the part of Mr. Sharpen to hold forth as a fully-qualified man, but if necessary he could call crowds of witnesses to prove that he had attended their animals and given every satisfaction. Having characterised the case as a manufactured one, he said no one had been called to whom defendant had declared himself to be a qualified man, and there was nothing to prevent the father having unqualified assistants in every part of England.

After a short consultation in private the Chairman said the Bench had decided to convict, and a penalty of £1 would be imposed, the costs bringing it up to £1 11s. —*Norfolk Daily Standard.*

A NEW YORK FIRE-ENGINE HORSE.

Seldom it is that a horse stays twenty years in work as hard as that demanded in the fire department, but the city of New York has one which is credited with performing that wonderful feat, says the *New York Mail and Express.* "Jim, of Thirty-three" is almost as well known to fire department members as Chief Bonner. His picture and biography are in the official history of the organisation. Few men have served much longer than he has, and none more faithfully or bravely. He is a horse—a big roan, whose Norman pedigree is clear. He was born in Kentucky, and was sent to Engine House 33, in Great Jones Street, January 14, 1879. He remained there on active duty until November 4, 1897. The rule of the department is that its horses, when unfit for the hard service of pulling engines, hose reels or trucks, shall be sold at auction. But no such fate will afflict "Jim of Thirty-three." Captain Nash of his company sent the following communication to the fire board which met on Nov. 20th :—

"I respectfully forward a brief history of the roan team of horses formerly used in the engine of this company. Of the original 'Jack' horse I have not much to write, he being killed while responding to an alarm for fire at Station 236 on May 30th, 1881., by colliding with the shaft of engine No. 13 tender. The point of the shaft entered his breast. The 'Jim' horse, registered No. 60, was then mated with horse registered No. 350, May 5th, 1883. As to the horse 'Jim,' who was received at these quarters on January 14th, 1879, and performed duty therein until November 4th, 1897, a period of

eighteen years and nine months, the first eleven years of which 'Jim' and his mate had to draw a heavy first-class engine, when the runs were more frequent and much longer than those of the present day, when the same identical engine is drawn by three horses, the 'Jim' horse, in the opinion of all the officers and members ever connected with this company and the many distinguished persons who visited these quarters, was such that they expressed the belief that there never was a horse that showed more intelligence than the 'Jim' horse.

At the sound of the gong he would bound from his stall at full speed, and to prevent himself going beyond his proper position under the collar, he would actually slide along the floor sometimes as much as eight feet, never failing to stop at his proper position. If a member of this company failed to unhitch a snap or other part of the harness, 'Jim' would not move until the same was done. He would be turned loose on the street and sometimes go 300 feet from quarters, but tap the gong, and you would instantly see Jim gallop to the sidewalk in front of the quarters, turn round, and back to his proper place under the harness. At fires he has often been covered with a shower of broken glass or other falling objects, deluged with water from bursted hose, but it never disturbed Jim in the least. Jim and his mate were at the horse show held at Madison Square Garden on October 26th, 1883, and won first prize, a set of harness, for quick fixing, the time consumed in the trials being one and a quarter seconds one and five eighths and one and a quarter seconds, respectively. There was never a horse connected with this department who performed so much hard service as faithfully as poor old Jim, to say nothing of the pleasure he gave the many visitors at these quarters by his actions, which showed almost human intelligence."

"I don't exactly know what will be done with Jim," said Capt. Nash last night, "but he'll be taken care of. He's in the Hospital now, but I guess he'll be sent to one of the companies up there in the country above Harlem, somewhere where he'll not have to go out more than once in two weeks or so. There's good service in him yet. In nearly nineteen years of service Jim was never sick a day, and never missed a fire. Jim wore out half a dozen mates during his service, and saw one killed at his side. His last time on duty was in the latter part of October, when he helped pull engine No. 31 down to Chambers Street. "Look at that game old cuss," shouted the driver, delighted. Jim was at one of his old tricks. The horse alongside him was trying to "loaf," and Jim had turned while at the gallop and was biting a fierce admonition into his neck.—*The Horseman.*

ALLEGED CRUELTY AT HALIFAX.

At the Halifax Borough Court, before Mr. J. Shoesmith and Councillor J. Whitaker, Charles Rushworth, butcher, Ambler Thorn, and Herbert Tidswell, a lad in his employ, were summoned, the latter for working a horse whilst in an unfit state, and the former for causing the animal to be worked. The case for the prosecution, which was conducted by Inspector Clarke, the local officer of the R.S.P.C.A., was that, about 11.30 on the 23rc ult., P.C. Gledhill was at North Bridge End, when he saw the defendant Tidswell in charge of a horse attached to a cart laden with about 25 cwt. of clay. The animal, the officer considered, was in a shockingly poor condition, and he described the body as more or less covered with sores. He saw that it was lame on the off fore leg. This, the lad in charge explained, was due to defective shoeing after leaving Queensbury, and a subsequent examination by Inspector Clarke led him to the conclusion that this was probably the case. Two suppurating wounds, the two officers were agreed, were found under the saddle. The horse, altogether apart from the lameness, was regarded by both of them as unfit for the work it was performing by reason of its poor condition and the sores." P.C. Gledhill, in his evidence, informed the Bench that the horse was so poor that he could count nearly every bone in its body, and sores existed all over it.—Mr. Sykes (who defended): It never occurred to you to have this terrible horse here?—Witness: The Inspector is conducting this case.—Mr. Sykes: Then you think he is conducting it very badly, do you?—Witness: I think he is conducting it very well.—Inspector Clarke stated that, when the defendant Rushworth was seen, he accounted for the animal's poor condition by asserting that its disposition would not allow of him giving it oats, The sores on the legs, he alleged, were caused by the animal biting itself, and he denied that it had ever had any sores on its back. Witness had never seen a horse so completely covered with vermin.—Clement Digby, of Woodside Road, and Harry Dixon, Bank Field stables, lads of eleven years of age, spoke to seeing the horse on the 23rd whilst the inspector was present, and described the sores which, they stated, they saw upon it.—Mr. Shoesmith, speaking on behalf of himself and Councillor Whitaker, expressed regret that the inspector had been unable to get adult corroborative evidence, stating that they disliked to see young boys brought into court.—Inspector Clarke: It is to my distate as well, your worship, to bring them, but as I had no adult evidence I had to do so.—Mr. Sykes, for the defence, called three witnesses. The first, John Fleming, blacksmith, Ambler Thorn, deposed to shoeing the horse in the morning, and said that it was then in workable condition. There were a few "hitching" sores on the legs. On the back, however, there was nothing but an old scar, which had dried up. He replied to the inspector that he never thought of advising defendant to bring the horse to court for the magistrates to see.—Mr. Briggs, veterinary surgeon, was next called. Before he had commenced his evidence, Inspector Clarke interposed, "May I ask Mr. Briggs to kiss the book again. I distinctly saw him kiss his thumb that time. It will be far more satisfactory to me to kiss it again.—Councillor Whitaker: What I saw was he opened the book the same as you did.—Mr. Briggs: I distinctly kissed the book, your worships. Proceeding to give evidence, he deposed that he was called in to see the horse on the 24th, and found nothing the matter with it apart from the lameness. He gave a complete denial to the description given of its condition by the officers.—The Chairman suggested that, in view of the direct contradiction, two different horses must be spoken of by the witnesses.—Mr. Sykes said that, if Mr. Briggs would state what had transpired between him and the Inspector, it would assist their worships in getting rid of this nightmare of the two horses.—Inspector Clarke: I could object, but it is not my intention, because I am as curious to hear what he says as your worships.—Mr. Briggs then said that, when he was told that proceedings were being taken against defendants, he went to see the inspector, because he could not believe that it could be true. The Inspector told him that, evidently, he did not know what a sore back was. He was very insulting, charged him with being a man who did not tell the truth, and told him that the magistrates knew him as such. Inspector Clarke: I told you, I think, I could not stand an unprincipled liar?—Mr. Briggs: Yes.—Inspector Clarke: And I meant it.—Mr. Briggs, in further evidence, described the animal as over fed.—Inspector Clarke observed that, evidently, there was some mistake as to the identity of the horse, and he asked the Bench to adjourn the case, so that "this overfed fine animal" might be produced.—Councillor Whitaker asked Mr. Briggs if he would describe the horse as an animal having plenty of flesh?—Mr. Briggs: She is in better condition than being fat. She is hard, like the 'bus horses.—The Inspector: She is like the 'bus horses!

Oh, then, I will leave it with that.—John Berry, in the employ of Messrs. Stott, was the third and last witness for the defence, and he described the animal as having only a dried up scar on the back.—Defendant Rushworth, questioned by Councillor Whitaker, stated that the animal, but for being stopped, would have had to draw the load of clay up New Bank.—Councillor Whitaker: It was not a poor horse, then.—The Bench, having regard to the contradictory evidence, decided to dismiss the case. —*Halifax Evening Courier.*

PROGRAMME OF THE NINTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

It will be remembered that the Ninth International Congress of Hygiene and Demography was to have met last year at Madrid. The disturbed condition of Spain, due more particularly to the insurrection in Cuba and the Philippine Islands, rendered a postponement of the Congress inevitable. It is now announced, however, that the Congress will meet this year at Madrid from the 10th to the 17th of April. A preliminary programme has been drawn up by the "General Committee of Propaganda and Organisation." Dr. Amalio Grimeno, professor of the Madrid Faculty of Medicine, senator, and member of the Academy of Medicine, is the general secretary of the Congress. All communications should be addressed to Dr. Amalio Grimeno, at the Ministry of the Interior, Madrid. Papers that are to be read to the Congress must be written either in Spanish, Portuguese, Italian, French, English, or German, as those are to be the official languages of the Congress.

The Congress is open to the delegates of governments, municipalities, and other local authorities, universities, academies, scientific societies, and special schools. Further, all persons who are specially engaged in the study of questions relating to hygiene or demography and who apply to the organising committee, may take part in the labours of the Congress. But the committee reserves the right of refusing admission where such admission does not seem justified by the circumstances of the case.

The subscription for full members of the Congress is 25 pesetas (£1) and should be sent to the treasurer, Sénor Pablo Ruiz de Velasco, president of the Chamber of Commerce, Madrid.

There will be an exhibition in connection with the Congress to be divided into ten classes—namely, didactic hygiene, the prophylaxis of transmittible diseases, town hygiene, home hygiene, the hygiene of exercise and of work, military and naval hygiene, the hygiene of schools and of childhood, the hygiene of food and of clothing, demography and statistics, and miscellaneous.

The Congress is divided into ten sections for hygiene, which in a great measure correspond with those of the exhibition, and in three sections for demography.

The fourth section will deal with town sanitation—the disposal of sewage, sewage farms, the pathogenic influence of sewer air, filters and public fountains, cheap but healthy houses, public slaughter houses, the microscopic examination of meat, etc.

The ninth section is devoted to the means of preventing the spread of tuberculosis among domestic animals and its transmission to human beings. This is the section for veterinary surgeons and all that relates to animals and cattle.

The tenth is the architectural and engineering section. Here the Construction of penitentiaries, asylums, hospitals, crêches, &c., will be investigated, and there will be debates on the disposal of town refuse, ventilation and warming of buildings, and the accidents arising from the transmission of electric force.

AMERICAN ORATORY.

A very interesting and amusing article on American Associations appeared not long ago in *The Chemist and Druggist.* Here is the peroration of a recent eloquent address:—

"In the days when Greece was great; when from Sparta came those heroes who repelled the Persian hosts; when at Athens Plato taught; when Demosthenes scorched the souls of men with the fire of his eloquence; when from Mount Olympus' heights descended the rolling thunder of great Jove's anger, there flourished the Delphian Oracle, at the gate of whose temple the sick were brought and laid, that pandering priests might come with their false words and worthless healing-balm of Apollo's own compounding—in this hour arose the father of our science, Hippocrates, who, gathering together the golden sands of knowledge which had washed down the River of Time, worked them over in the crucible of his mighty brain, and behold! our science was crystallised.

In those dark, mediæval days, when in cloistered cell cowled monks strove to keep alive the flickering spark of learning, the Father of Men kept watch and ward over our art, that it might live through those trying times, then rose the sun of our modern epoch, and it was glorious day; the empyric crushed spiders for his deluded patient, but Galen, Harvey, and Jenner were born; the surgeon yet cut the limb from the body with a blow, and staunched the blood by searing with heated iron, but Morton and Simpson blessed poor humanity by the discovery of anæsthetics; the madstone was sought far and near when someone had been bitten by a rabid dog, and, being found, became only a hope to those who stood by and watched the agonies of death by hydrophobia, but Pasteur, by years of earnest research, has eliminated this danger, has cut off this tentacle of the octopus death. To-day we have our antirheumatic rings, our electropoise, our magnetic healer, and our osteopathists, but, thanks to the unfailing result of perseverance, our sincere and earnest brethren have given us antiseptics, that we may cut, when necessity demands, without danger; have taught us to laugh at diphtheria; have given us an abortive method wherewith to cut short the dragging days of typhoid fever; and we can prophesy, without boasting, that before many years—perhaps before the nineteenth century shall have tottered to its grave—we shall be able to throttle that most cruel and deadly disease, tuberculosis. We hope not to defy Death, for he must conquer all; we hope not to re-create the shattered vase, but by skilful aid to make it hold again the sparkling wine of life.

"When Nature will not work, then art is void,
For physic can but mend our crazy state;
An old building patch—not a new create."

Advertising.

A correspondent wishes to know if this is advertising in a professional manner:—

HORSE BREAKING. (By Premier New Patent Horse Brake). Mr. HILL, Veterinary Surgeon, Glasgow Cattle Market, undertakes the Educating of Horses to Harness, and warrants them to stand Steam, Road Rollers, Traction Engines, Motor Cars, &c., Cannot rear, lie down, wheel, or run away.

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I obtained from the directors, thanks to their eminent President, permission to submit the whole of their horses to the mallein test. This was no light undertaking, for it was necessary to operate without interfering with the work of the Company. In each depôt it was necessary to separate the healthy animals from those which were contaminated, as shown by the mallein test ; and it was necessary to distribute them in special stables with attendants and utensils for their exclusive use. Above all, it was necessary to interdict their access to common drinking troughs, which are, unfortunately, the rule in France in all the great studs of horses ; finally, it was necessary to disinfect all the stables, and in the case of those with wooden mangers and partitions it was necessary to substitute cement for the wood, so as to render disinfection possible.

The Company granted me permission to do all that I considered necessary. The operation lasted eight months; it was carried out in the best conditions by three of my pupils, MM. Schrader, Guignard, and Malet, under the admirable direction of one of my old fellow students, M. Blanc, head of the department.

Out of 10,231 horses submitted to the test, 2037, or in round numbers, 20 per cent., gave the characteristic reaction. This percentage though so high does not quite show the gravity of the disease, for out of twenty-three depôts belonging to the Company sixteen were almost exempt from the disease ; in the seven others the number of contaminated horses varied from 32 to 56 per cent.

Out of these, 2037 animals which were denounced by the mallein test although none of them presented the least symptom indicative of glanders, 687 became clinically glandered and had to be slaughtered (440 between July and December 1895, 152 in 1896, and 15 in 1897) ; on the other hand, 338 *have ceased to react to mallein, and have been returned to the category of the healthy.* A large number of these have had to be cast on account of old age, the wear and tear of work, or accidents. We have made a post-mortem examination in each case ; in the whole of them the lesions were manifestly cured, being fibrinous or calcareous. In a certain number of animals these lesions were carefully collected and used to inoculate culture media or animals ; the cultures have not given Löffler's bacillus, and none of the inoculated animals have taken glanders.

The operation would not have been complete if we had not submitted to the mallein test the horses purchased to recruit the stock. Out of 5027 horses submitted to the committee for purchase in 1895 mallein denounced 237, or 4·71 per cent., and these were returned to the dealers.

In 1896 the proportion of suspects reached 6·77 per cent. of the inoculated horses, that is to say, 381 out of 5626. Do not these figures eloquently demonstrate the extreme importance of this measure ?

Mallein has not only the advantage of enabling us to make an early diagnosis of pulmonary glanders, which is inaccessible to any other means of diagnosis, and of thus rendering us masters of the disease ; it has also permitted us to return to work a large number of horses which one would formerly have had to isolate as suspects on account of symptoms indicative of glanders. From the 11th October, 1895, to the 30th June, 1897, 627 horses had thus to be submitted to the mallein test (392 on account of enlargement of the submaxillary glands, 63 on account of nasal discharge, 156 on account of lesions simulating the swellings, lymphangitis, or farcy buds, 2 on account of epistaxis, 14 for various lesions). Out of these 627 horses only 265 have been recognised glandered and slaughtered ; 362 were not glandered, and could be immediately returned to work.

The following figures will give a good idea of the results obtained by the systematic application of these measures. They refer solely to the horses presenting external symptoms of glanders. The number of animals killed in this way in the last half of 1895 was 586 ; they fell gradually to 159 in the first six months of 1896, and to 140 in the following six months, and only 62 were killed in the first half of 1897.

It ought not to be forgotten that out of these 62 horses killed in 1897, 15 were already glandered without symptoms in 1895 ; the figure ascribable to new infection is therefore only 47 ? That is a rather low figure, normal one might say in view of the conditions of work of the Company's horses. While waiting at the public stands for fares they are constantly in contact with all sorts of horses ; contrary to the orders given to their drivers they often drink from the common pails kept at the stands or at public-houses. They are thus incessantly exposed to infection, but the measures which are taken warrant the statement that such accidental infections, which will take place from time to time as long as all the stables of the cab proprietors have not a clean bill of health, will remain limited, and provoke only small unimportant outbreaks, easily stamped out, and that the serious state of affairs existing in 1895 will not occur again.

Thus it is seen that the application of the measures which I recommend has in practice yielded the results that theory, based on experiment, permitted one to anticipate.

ARMY VETERINARY DEPARTMENT.

The recent ruling that officers not doing duty with troops shall pay, when proceeding in troop-ships to and from India, the full passage money for their wives and families will press very heavily upon those who are victims of the official decision. One class more particularly has good reason to complain. We refer to officers of the Army Veterinary Department. It is not to be supposed that in any circumstances there will be duties an board an Indian troopship for a veterinary surgeon, unless, of course, the vessel is conveying a cavalry regiment with horses. As matters now stand a veterinary officer not only loses pay by serving in India, but must either leave his wife at home for six years or pay £55 for passage out, and a similar sum on the expiration of his tour. As children have also to be paid for at P. and O. rates, the expense of an Indian tour to a man with a family will be extremely heavy. We cannot believe that such a grossly unjust decision was ever contemplated. The Goverment of India have never taken a very enlightened view as regards the veterinary staff; had they done so thousands of public money would have been saved to their exchequer. Even in the arrangements of the present frontier campaign much extravagance has been due to this disregard of common-sense measures. A government which will thus run up costs

out of pure obstinacy cannot perhaps be expected to act liberally towards those whose services are more or less despised, but at the end of this nineteenth century it is not too much to hope that something may be done to protect the Indian taxpaper, not by the pettiest of petty economies, such as this one to which we draw attention, but by a proper organisation of the transport service in India, so as to prevent in future the scandals which are continually coming to light, and which could be minimised, if not actually prevented, by a perfection of system and due recognition of the advances that have been made by the veterinary service in the last decade.—*Army and Navy Gazette.*

CORRESPONDENCE

"IN RECOGNITION."
SIR GEORGE T. BROWN, C.B.

Sir,

It has been suggested that Professor Sir George T. Brown, C.B., should be entertained to a complimentary dinner by his late colleagues at the Board of Agriculture, the Royal Veterinary College, and other members of the veterinary profession, in order to mark their appreciation of the honour recently conferred upon him by Her Majesty, and in recognition of the great services which he has rendered to the cause of veterinary science. The undersigned have formed themselves into a committee to make the preliminary arrangements necessary to give effect to this suggestion. Members of the profession who are in sympathy with the proposal and desire to join the committee are requested to send their names to R. A. N. Powys, Esq., Royal Veterinary College, who has kindly consented to act as Secretary to the Committee.—We are, sir, your obedient servants,

ALEX. C. COPE.
J. MCFADYEAN.
JNO. PENBERTHY.

AN AGED COW.

Dear Sir,

A client of mine, Mr. Becket, of Horsey, to-day shot a cow he had had thirty-one and a half years. He bought her when in calf with the first calf, and she never had a dose of medicine whilst in his possession.—Yours truly,

H. WILKINSON.

Martham, Great Yarmouth.
January 4th, 1898.

SERUM-THERAPY IN TETANUS.

Dear Sir,

I have read with a very great deal of pleasure the most excellent paper on "Tetanus" delivered before the Royal Counties Veterinary Medical Society, by Mr. Sidney Villar, F.R.C.V.S, on the 26th of November last.

In this southern section of the United States the disease is extremely prevalent, chiefly resulting from nail wounds in the feet. I attribute this mainly to the fact of our having so many frame (wooden) buildings, in which large quantities of nails are necessarily required, and as a consequence, our streets and roads are plentifully bestrewn, so to speak, with them. I have been inclined to the opinion, that the nail, when remaining for a length of time in our infected street-dust, becomes contaminated with bacilli, and when puncturing the foot inoculates the wound with the organism. At all events, it would appear that the tetanus bacilli are carried into the wound by the nail, because, in some cases, the nail may have simply gone in and come out again with immediate and complete or almost complete closure of the aperture in the horny sole.

I have observed, in numerous issues of your valuable weekly, a great many expressiont of opinion lately, both for and against the curative effects of anti-tetanic serum; and, if we take the conclusions arrived at by Nocard himself (who has conducted some earnest experimental work along this line) that "the curative treatment of tetanus has still to be discovered," one is apt to be shaken in their opinion that recoveries are due to the effects of this agent, and that the cases would have recovered without the administration of any treatment whatever.

Notwithstanding our doubts, however, in the efficacy of serum therapy in tetanus (based upon results in the hands of others) my personal experience with anti-tetanin has, to say the least of it, been very gratifying. At varying intervals during the last two years I have had eight cases (6 horses and 2 mules) under treatment with serum; six out of the eight having made a perfect recovery and are alive and at work to-day. The two which succumbed (both horses) were so far advanced in the disease that had it not been for the owner's anxiety to have the agent administered with the hope that it *might* have the desired effect, I would certainly not have given it. The animals that recovered were taken at an early stage of the disease, but all had trismus more or less well marked. The quantity of the serum injected never exceeded 30 cc. at one time, and that only on a single occasion. For the first three injections, six hours apart, 20 cc were given; after that 10 cc. And the greatest total quantity did not exceed 110 cc. My experience was, that if the masticatory muscles and those of deglutition were not sufficiently affected to produce complete trismus and inability to swallow, the effect of the serum was to stay the ptomainic effects in those muscles. Although it may be possible for all of those cases to have recovered without the administration of the serum, it is a difficult matter, in the face of such a record, to convince oneself that such could have been the case. The anti-toxin used was from the Institut Pasteur de Paris. I do not believe in the efficacy of the serum in an advanced case, but in the earlier stage of the disease, I cannot but believe it worthy of trial. From time to time I have tried almost every agent that has been suggested: tri-chloride of iodine, sulphate of eserine, gelseminine, etc., etc., but without a particle of success until using the serum, and the above is the record so far.

I may mention that I have had two cases of tetanus in the pig, both of the same litter, following castration. And one in a yearling calf, after öophorectomy (flank operation).

In Mr. J. F. Simpson's remarks, in the discussion of Mr. Villar's paper, he refers to the normal high temperature of the fowl conferring immunity again anthrax, which has for long been an accepted theory, and suggests that this is this probable factor in rendering it immune against tetanus.

If you will pardon a digression, I would like to state, that in a very extensive epizootic of anthrax which occurred in this state (Louisiana) the summer of 1896, many fowls died from eating the flesh and offal of charbonous carcases that had not been properly disposed of; and at the time, the temperature in the shade was from 98 to 100 deg. F.

Another very interesting and important occurrence took place during the outbreak, and if a fact, which, however, has not, so far as I am aware, been proved by experiment, but may be undertaken here this summer, will upset the theory that *fish* will not contract anthrax on account of their *low* normal temperature. Many carcases of animals that had died of anthrax—the owners not appreciating the danger—were thrown into some fresh water lakes. Afterwards, dead fishes in thousands could be seen floating on the surface of the water. Not

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The following figures will give a good idea of the results obtained by the systematic application of these measures. They refer solely to the horses presenting external symptoms of glanders. The number of animals killed in this way in the last half of 1895 was 586 ; they fell gradually to 159 in the first six months of 1896, and to 140 in the following six months, and only 62 were killed in the first half of 1897.

It ought not to be forgotten that out of these 62 horses killed in 1897, 15 were already glandered without symptoms in 1895 ; the figure ascribable to new infection is therefore only 47 ? That is a rather low figure, normal one might say in view of the conditions of work of the Company's horses. While waiting at the public stands for fares they are constantly in contact with all sorts of horses ; contrary to the orders given to their drivers they often drink from the common pails kept at the stands or at public-houses. They are thus incessantly exposed to infection, but the measures which are taken warrant the statement that such accidental infections, which will take place from time to time as long as all the stables of the cab proprietors have not a clean bill of health, will remain limited, and provoke only small unimportant outbreaks, easily stamped out, and that the serious state of affairs existing in 1895 will not occur again.

Thus it is seen that the application of the measures which I recommend has in practice yielded the results that theory, based on experiment, permitted one to anticipate.

ARMY VETERINARY DEPARTMENT.

The recent ruling that officers not doing duty with troops shall pay, when proceeding in troop-ships to and from India, the full passage money for their wives and families will press very heavily upon those who are victims of the official decision. One class more particularly has good reason to complain., We refer to officers of the Army Veterinary Department. It is not to be supposed that in any circumstances there will be duties an board an Indian troopship for a veterinary surgeon, unless, of course, the vessel is conveying a cavalry regiment with horses. As matters now stand a veterinary officer not only loses pay by serving in India, but must either leave his wife at home for six years or pay £55 for passage out, and a similar sum on the expiration of his tour. As children have also to be paid for at P. and O. rates, the expense of an Indian tour to a man with a family will be extremely heavy. We cannot believe that such a grossly unjust decision was ever contemplated. The Goverment of India have never taken a very enlightened view as regards the veterinary staff; had they done so thousands of public money would have been saved to their exchequer. Even in the arrangements of the present frontier campaign much extravagance has been due to this disregard of common-sense measures. A government which will thus run up costs

out of pure obstinacy cannot perhaps be expected to act liberally towards those whose services are more or less despised, but at the end of this nineteenth century it is not too much to hope that something may be done to protect the Indian taxpaper, not by the pettiest of petty economies, such as this one to which we draw attention, but by a proper organisation of the transport service in India, so as to prevent in future the scandals which are continually coming to light, and which could be minimised, if not actually prevented, by a perfection of system and due recognition of the advances that have been made by the veterinary service in the last decade.—*Army and Navy Gazette.*

CORRESPONDENCE

"IN RECOGNITION."
SIR GEORGE T. BROWN, C.B.

Sir,

It has been suggested that Professor Sir George T. Brown, C.B., should be entertained to a complimentary dinner by his late colleagues at the Board of Agriculture, the Royal Veterinary College, and other members of the veterinary profession, in order to mark their appreciation of the honour recently conferred upon him by Her Majesty, and in recognition of the great services which he has rendered to the cause of veterinary science. The undersigned have formed themselves into a committee to make the preliminary arrangements necessary to give effect to this suggestion. Members of the profession who are in sympathy with the proposal and desire to join the committee are requested to send their names to R. A. N. Powys, Esq., Royal Veterinary College, who has kindly consented to act as Secretary to the Committee.—We are, sir, your obedient servants,

ALEX. C. COPE.
J. MCFADYEAN.
JNO. PENBERTHY.

AN AGED COW.

Dear Sir,

A client of mine, Mr. Becket, of Horsey, to-day shot a cow he had had thirty-one and a half years. He bought her when in calf with the first calf, and she never had a dose of medicine whilst in his possession.—Yours truly,

H. WILKINSON.

Martham, Great Yarmouth.
January 4th, 1898.

SERUM-THERAPY IN TETANUS.

Dear Sir,

I have read with a very great deal of pleasure the most excellent paper on "Tetanus" delivered before the Royal Counties Veterinary Medical Society, by Mr. Sidney Villar, F.R.C.V.S, on the 26th of November last.

In this southern section of the United States the disease is extremely prevalent, chiefly resulting from nail wounds in the feet. I attribute this mainly to the fact of our having so many frame (wooden) buildings, in which large quantities of nails are necessarily required, and as a consequence, our streets and roads are plentifully bestrewn, so to speak, with them. I have been inclined to the opinion, that the nail, when remaining for a length of time in our infected street-dust, becomes contaminated with bacilli, and when puncturing the foot inoculates the wound with the organism. At all events, it would appear that the tetanus bacilli are carried into the wound by the nail, because, in some cases, the nail may have simply gone in and come out again with immediate and complete or almost complete closure of the aperture in the horny sole.

I have observed, in numerous issues of your valuable weekly, a great many expressiont of opinion lately, both for and against the curative effects of anti-tetanic serum; and, if we take the conclusions arrived at by Nocard himself (who has conducted some earnest experimental work along this line) that "the curative treatment of tetanus has still to be discovered," one is apt to be shaken in their opinion that recoveries are due to the effects of this agent, and that the cases would have recovered without the administration of any treatment whatever.

Notwithstanding our doubts, however, in the efficacy of serum therapy in tetanus (based upon results in the hands of others) my personal experience with anti-tetanin has, to say the least of it, been very gratifying. At varying intervals during the last two years I have had eight cases (6 horses and 2 mules) under treatment with serum; six out of the eight having made a perfect recovery and are alive and at work to-day. The two which succumbed (both horses) were so far advanced in the disease that had it not been for the owner's anxiety to have the agent administered with the hope that it *might* have the desired effect, I would certainly not have given it. The animals that recovered were taken at an early stage of the disease, but all had trismus more or less well marked. The quantity of the serum injected never exceeded 30 cc. at one time, and that only on a single occasion. For the first three injections, six hours apart, 20 cc were given; after that 10 cc. And the greatest total quantity did not exceed 110 cc. My experience was, that if the masticatory muscles and those of deglutition were not sufficiently affected to produce complete trismus and inability to swallow, the effect of the serum was to stay the ptomainic effects in those muscles. Although it may be possible for all of those cases to have recovered without the administration of the serum, it is a difficult matter, in the face of such a record, to convince oneself that such could have been the case. The anti-toxin used was from the Institut Pasteur de Paris. I do not believe in the efficacy of the serum in an advanced case, but in the earlier stage of the disease, I cannot but believe it worthy of trial. From time to time I have tried almost every agent that has been suggested: tri-chloride of iodine, sulphate of eserine, gelseminine, etc., etc., but without a particle of success until using the serum, and the above is the record so far.

I may mention that I have had two cases of tetanus in the pig, both of the same litter, following castration. And one in a yearling calf, after öophorectomy (flank operation).

In Mr. J. F. Simpson's remarks, in the discussion of Mr. Villar's paper, he refers to the normal high temperature of the fowl conferring immunity again anthrax, which has for long been an accepted theory, and suggests that this is this probable factor in rendering it immune against tetanus.

If you will pardon a digression, I would like to state, that in a very extensive epizootic of anthrax which occurred in this state (Louisiana) the summer of 1896, many fowls died from eating the flesh and offal of charbonous carcases that had not been properly disposed of; and at the time, the temperature in the shade was from 98 to 100 deg. F.

Another very interesting and important occurrence took place during the outbreak, and if a fact, which, however, has not, so far as I am aware, been proved by experiment, but may be undertaken here this summer, will upset the theory that *fish* will not contract anthrax on account of their *low* normal temperature. Many carcases of animals that had died of anthrax—the owners not appreciating the danger—were thrown into some fresh water lakes. Afterwards, dead fishes in thousands could be seen floating on the surface of the water. Not

long ago, Professor Dubord, of the Dyon School in France, produced tuberculosis in carp by throwing the sputum and dejecta of tubercular patients into a reserve body of water in which the carp were kept for the experiment. It seems just as likely in the one case as in the other, especially as fish are poikilothermic, and at the time the fish were observed by me, during the anthrax outbreak, the temperature of the water was considerably elevated. This is an important matter from a public health standpoint, especially where animals used for human food, as pigs, are allowed at large in the vicinity of shallow bodies of water, particularly in countries where the disposal of charbonous carcases is not properly under control.

I must offer you an apology for occupying so much of your valuable space, but I thought those of your readers who have been employing serum therapy in tetanus might be interested to hear of its results in other parts of the world. I always look forward with pleasure to receiving my weekly *Record* for the valuable, and to me, interesting matter it contains relative to professional matters in the old country.—Very sincerely yours,

W. H. Dalrymple, M.R.C.V.S.,
State University and
Agricultural and Mechanical College,
Baton Rouge, La., U.S.A.
December 30th, 1897.

THE HALIFAX DOCKING CASE.

Sir,

Seeing that you have published the balance sheet in the above case, and have since by your leaderette drawn attention to the fact of a £36 credit balance, we should now be pleased to hear from your readers, through your columns, as to the best means of applying the said sum.

So far as we are concerned we elect to hold the position of custodians only, and we are prepared to dispose of the balance in any manner which shall receive most support from subscribers and from those gentlemen who, at considerable expense and inconvenience, came over to Halifax to help us in the defence.

To the latter gentlemen we are greatly indebted, and where so many gave their valuable services and time to carry out that grand and applicable adage *Vis Unita Fortior*, it would be invidious to single out any gentleman for special honours.

To all we generously and freely accord our thanks and sense of gratitude, and to you, sir, particularly for voicing the thanks of the profession to us for services rendered. As you suggest, no one except those who have undertaken such matters can have the remotest idea of the amount of work involved.

But as a labour of love we stuck steadily to our guns, and the result of the trial in Halifax, and the sudden collapse, *at the last moment*, of the threat to appeal was ample compensation.

In conclusion, may we venture to throw out one suggestion as to the disposal of a moiety of the balance in hand (say the odd £6) and for this reason, viz., our case was mainly won by the sheer hard work, skill, and unceasing and indomitable energy infused into the preparation of the defence by Mr. Smith (managing clerk to our solicitor, Mr. W. N. Boocock.) For whilst this gentleman made lawyers of us he, himself, became skilled in veterinary surgery. Mr. Smith has left Halifax, much to our regret and loss, to commence practice for himself in Oldham, Lancashire, and as a graceful and grateful act from the profession we should esteem it a concession to be allowed on its behalf to give practical recognition of indebtedness to him.—Yours faithfully,

Parlane M. Walker.
A. William Briggs.

Halifax, January 10th, 1898.

MILK FEVER.

Sir,

Like Mr. F. E. Place I can testify to the valuable effect of leaving the udder alone as much as possible in cases of milk fever, and think that this plan is adopted at present by a good number of veterinary surgeons. When acting as assistant in Wales, and as a locum, this precaution, together with Mr. McConnell's (Wigtown) medicinal treatment, has been adopted with excellent results. However, I should be guilty of aberration from the truth if I were to assert that an average of 92 per cent. (Schmidt's average) of the cases recovered. Mr. McConnell in 1891 reports 23 recoveries out of 28 cases, and later he gives an average of 90 per cent. of recoveries. Mr. H. Thompson, of Aspatria, stated his belief in 1893 that milk fever was due to the elements of colostrum, and other English observers have agreed with him as to the cause, so that Schmidt's theory is not new although his treatment may be.

By adopting Professor Macqueen's advice many of my results have been good, but the average is not so high as Schmidt's, nor have I yet read or heard of one that is; so that as Mr. Place observes the *result*, in many cases, seems to be identical, yet I doubt if *the number of the results is*.

G. Mayall.

A DRAMATIST "UNEARTHED" *V.* "AN UNPRINCIPLED LIAR."

Dear Sir,

I send by this post copy of this day's *Halifax Evening Courier* containing a report of alleged cruelty against a client of mine, brought at the instance of Inspector Clarke, R.S.P.C.A.

I leave your readers to judge for themselves as to the relative value of the evidence as reported.

In addition to what I stated *re* my interview with Inspector Clarke, he distinctly stated to me that he could call no less than two dozen witnesses to prove sore back. In contradistinction he called two boys aged eleven, *poor little innocent things who could not lie*, and who could not possibly have seen the mare's back except by the aid of some gymnastic performance, to help him and the police constable to support the case, but whose evidence did not apparently "wash" with the magistrates.

The lameness referred to was purely accidental, and proved so, owing to the mare having picked up a French wire nail. The mare was "stopped" by the police constable on the ground of lameness only, and the sore back theory was an afterthought.

I leave your readers to judge between the position of Inspector Clarke and myself.—Yours faithfully,

A. W. Briggs, M.R.C.V.S.

Halifax, Dec. 11th, 1897.

(The report of case appears on p. 404.)

Communications, Books, and Papers received:—Dr. W. H. Dalrymple. Major J. A. Nunn, Messrs. G. Mayall, A. W. Briggs, C. M. W. Park, P. M. Walker, J. Dunlop, T. Bowhill, A. M. Brodie.

Hygienische Rund-schau. Dumfries and Galloway Courier, The Evening Dispatch (Edin.), *The Hereford Journal, Halifax Evening Courier.*

We shall be obliged by early intelligence of all matters worth bringing under the notice of the profession, and thankful to any friends who may send us cuttings from local papers, containing facts of interest.

Original articles and reports should be written on one side only of the paper, and authenticated by the names and addresses of the writers, not necessarily for publication.